An Analysis of ten years' Medical Certificates of the Cause of death.

Peter Fraser, M.B.

June 1892

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

In considering what subject to choose for a Thesis in order to obtain the degree of "Doctor of Medicine", the very width in the choice of subjects allowed, has really made it difficult for me to select a suitable one, and the number of years which have elapsed since I took the "Bachelorship of Medicine", makes me backward and almost ashamed to endeavour to get the higher degree. However, if I never venture, I can never hope to win.

It occurred to me quite lately on looking thro' my desk and finding a number of my old Death Certificate Books that I might use them as a nucleus round which to construct a Thesis; so, I will try to make an Analysis of the Contents of them for 10 years. The information is obtained from the Counter-foils which, I am glad to say, I have always filled up accurately. These Counter-foils are useful for reference, and contain an

epitome of the facts recorded on the Death Certificate itself. The Medical Certificate of the Cause of death is given by a near relation of the deceased, or by one who was present at the death, to the local Registrar, who makes an exact copy of it and gives in exchange a little form to be presented to the Clergyman at the funeral.

Before entering on the subject proper of the Thesis, it will not be amiss to describe briefly, from a somewhat medical point of view, the place in which I have practised during the last 15 years.

Leyland, i.e. grazing land, 5 miles south from Preston, Lancashire, is a large village with a population of 5972 at the last census. The staple trade of the place is Cotton, but there is also a large Bleach-works, a large Rubber-works, & a little wire-drawing work, besides the

Gas-works, a small Gold-thread Factory and Iron-Foundry. In the Cotton-Factories, Bleaching and Rubber Works, women are largely employed; this is especially the case in the Cotton-Mills, where females of all ages between 10 & 50 or 60 years of age are to be found working as hard and earning as much or more money than many of their male brethern. It is quite common for women after getting married to continue to go to the Mill and to remain at their work until within quite a short time of their Confinement. Then very soon after that event, they return to their work at the Mill, the Infant is nursed by some neighbour at so much a week, and the mother goes on at the Mill, only remaining at home when she is sick, or shortly before, during & after Confinements. Children from the age of 10 years up to 13 who have passed the 3rd Standard

(in some places it is even the 2nd) go to the Mill as "half-timers", and work, one week at the Mill from 6 a.m. until 12.30 or 1 P.M. with half an hour for breakfast; then they are in school from 4.30 or 5 P.M.; the next week, the order is reversed; — they are in school from 9 a.m. until 12.30 or 1 P.M. and have to work in the Mill from 2 until 5.30 P.M. The result of this close confinement in Mill and School at this early age, shows itself in deterioration of the General health, stunted growth & anaemic faces. Life and work in the Mill also tend to make the Operatives unusually sensitive to changes of temperature and consequently very liable to chills which end in Pneumonia and Bronchial & Pulmonary Catarrhs. Pneumonia is a very common affection here, as also & all the usual diseases of the Respiratory Organs. Acute Rheumatism

is

rather uncommon, though Rheumatism, in its chronic forms, is not infrequent. The association or affinities of Quinsy and the Rheumatic Diathesis, are often illustrated in practice in this district, e.g. a person will have several Quinsies in succession with one more or less severe attack of Rheumatism intervening; sometimes, the two diseases occur simultaneously in the same subject, the Quinsy usually predominating; indeed, they are so frequently associated in individuals, or families or both, that one cannot help regarding them as little else than different manifestations of the same blood disorder.

By far the most common ailment, for which one is consulted here, is derangement of the Digestive Organs; this frequency is accounted for mainly by the quality of the food which is eaten, and by the large quantities of

Tea

and Coffee which are consumed: besides Bread, an enormous amount of pastry foods, usually called "Pie", is eaten. "Pie" is, generally speaking, partaken of at every meal, & Tea or Coffee by the pint & even the quart is swallowed too. No doubt, the Mill Operatives are thirsty, the nature of their work and the atmosphere in which they work, being certain to make them so. The common alcoholic beverage is Beer, brewed mainly by local Brewers; Wines and Spirits are, I believe, consumed less than in similar localities in Scotland; there is consequently less Intoxication here, one certainly does not see or hear so many Drunken people on a Saturday night. The water-supply is a continuous one and is of good quality for drinking purposes; it is obtained from the Whittle Hills, 3 or 4 miles away from

Leyland; this range of hills lies between Blackburn and Leyland. Blackburn lies on the east side of the hills in a valley, and Leyland lies to the west of the range between the hills and the sea from which it is distant about 5 miles, "as the crow flies." The water is obtained by boring and is pumped up to a reservoir & filtering beds and conveyed thence to the village. The water supply was introduced in 1883 and 2 years afterwards a system of sewerage was introduced. Previous to 1883 the water supply was by means of wells, a few good spring wells, but most of them no better than surface wells; consequently, the supply was inferior both in quality and quantity. There was then no system of drainage. It has been quite remarkable to me how free the community has been from Typhoid and Diphtheritic Fevers since the introduction of

water and drainage. I can remember before 1883 having every Autumn and Winter several cases of Typhoid Fever to treat, sometimes 2 or 3 cases in one house and, in one instance, 5 young persons had it severely in the one house all at or about the same time. Now matters are quite changed; I may say truly that I never see a case of Typhoid in Leyland now; at all events, I have not seen one for 4 or 5 years, and the reports of the Medical Officer of Health bear out my testimony to that effect. I see many cases of Zymosy, but seldom or never Diphtheria, and the few cases of the latter disease which I have seen of recent years have occurred in a district of the Parish which has not been drained. The population of Leyland in 1881 was 4961; and it increased to 5972 at the last census in 1891. The annual

death-rate from 1882 to 1890 inclusive is shown in the following table taken from the Medical Officer's annual reports.

Year 1882, death-rate per 1000. — 19·3.
" 1883 " " " " — 18·7.
" 1884 " " " " — 19·9.
" 1885 " " " " — 21·4
" 1886 " " " " — 22·4.
" 1887 " " " " — 20·8
" 1888 " " " " — 25·8
" 1889 " " " " — 25·8
" 1890 " " " " — 20·9

Average death-rate per 1000 for 9 years equal to 21·6. 21·6 per 1000 of population is a high death-rate for a small country town, or more properly, large village, for it is still ~~but~~ only a big village. Then there are various reasons why it ought to be a healthy place. Leyland is only about 4 or 5 miles from the South-West Lancashire Coast. The prevailing winds

in the Summer and Autumn are West & South-West; in the Winter, the wind is mainly North, and in the Spring months, the East wind blows; and there is some degree and extent of shelter from the East wind in the range of hills which lie a few miles to the East of Leyland; the surrounding country is also well-wooded. The soil is light and sandy and there are gravel-pits about a mile inland from Leyland in which marine shells and other remains are often found. Then the village has a system of sewerage, although, in some places, it is said there is not enough fall; it has a plentiful supply of excellent drinking water, and the whole village extends over a considerable area, so that the population, as a whole, have plenty good breathing space. The working class, generally, earn good wages, and many of them have comfortable, healthy homes,

so that in the course of a few more years during which the younger generation will reap the benefits of the improved sanitary conditions of the village, it is to be expected that the yearly death-rate will have materially lessened. And yet, when Local Boards and Sanitary Committees have done all they can do for the inhabitants as a whole, it seems to me that there still remains a great work for Medical practitioners and Education authorities in the way of teaching individuals and families some of the rudiments at least of the laws of Health such as the value of fresh air and of good ventilation, of temperance and moderation in eating and drinking, and the desirability of feeding and clothing infants in a proper way. One of the most difficult prejudices to overcome among the mill-hands is the dread of washing their feet, not to speak of their whole bodies; they will wash their faces

necks and hands, but it is a positive fact that great numbers of them never wash their feet at all, although they must sweat hard at their work. I know, by experience, how very disagreable is the smell as soon as the clogs are taken off. The popular idea is that they are sure to get cold if they wash themselves, and this idea is handed down as a tradition from one generation to the next and so on; it is difficult to fight against & to conquer this prejudice, especially in country places. However, the opening of public baths in towns and the great railway facilities for enabling the people to get to the seaside, combined with the steady pressure of genral medical opinion, will do much to hasten its overthrow.

To turn now to the subject proper of my Thesis, I find that from January 1882 until December 1891 inclusive (which is a period

of 10 years) I have certified 378 deaths; this is equivalent to an average of 37.8 deaths for every 12 months. These 378 legally certified deaths do not include certificates given for still-births and sudden deaths or deaths by violence; in the former case, viz. still-births, there is no form supplied by Government to be filled up like ordinary death certificates; all that is needed is a note-of-hand certificate by a qualified medical man that so & so has been delivered of a still-born male or female child with the date of the occurrence and the signature of the Medical man; this certificate is given by the father of the still-born child or, it may be, by neighbour women, to the Parish Sexton, who inters the child after dusk. I am not aware that the Sexton is obliged to keep a record of such interments; consequently several thousands of still-born children are buried every year without any permanent and official

register. I think the registration of still-born children should be made compulsory. As things are at present, there is not proper protection against children that are born alive being interred as still-born. A ~~good~~ large proportion of midwifery cases are attended by women who come to a doctor sometimes with a child in their arms, alleging that it was still-born and asking for a certificate to that effect to give to the Sexton so that they may get it buried the same evening. In such circumstances the practitioner has to trust to the opinion and the word of the woman who was present at the birth. Before giving such a certificate I always insist on seeing the body of the child; still, such an inspection does not in itself qualify a doctor to say with certainty whether the child may or may not have been born alive. The whole arrangement is rather crude and unsatisfactory and needs reformation, I think.

No still-born child should be interred until a certificate from the Registrar is provided, and the body should be inspected by the Medical Officer of Health or by some independent practitioner. The register of still-births should be kept separate from that of ordinary births.

In the case of very sudden deaths or of deaths by violence, an inquest is held by the Coroner who makes his report and gives the necessary Certificate for the burial.

I find then that, independently of still-births and sudden or violent deaths, I certified 378 deaths in the Course of 10 years. At the beginning of the books containing the forms of the medical certificates of the Cause of death, there are instructions for the medical practitioner as to the way of filling them up: there is also a classification and nomenclature of diseases drawn up by a joint Committee appointed by the Royal College of Physicians of London, 1868."

Diseases are divided into General & Local Diseases. General Diseases are exemplified in the Specific Fevers, Rheumatism, Cancer, Syphilis, Rickets & Anaemia

Local Diseases are divided into, —

1) Diseases of the Nervous System, which again are subdivided into, —
   a) Diseases of the Brain and its Membranes.
   b.) " " " Spinal Cord and its Membranes.
   c) " " " Nerves.
   d) Functional Diseases of the Nervous System.
   e) Disorders of the Intellect.
2) Diseases of the Eye.
3) " " " Ear.
4) " " " Nose.
5) " " " Circulatory System subdivided into, —
   a) Diseases of the Heart and its membranes.
   b) " " " Arteries.
6) Diseases of the Absorbent System, with

Diseases of the ductless Glands.

7) " " " Respiratory System.

8) " " " Digestive System, subdivided into,—

a) " " " Stomach

b) " " " Intestines.

c) " " " Liver.

9) " " " Urinary System, subdivided into,—

a) " " " Kidney

b) " " " Bladder.

c) " " " Prostate Gland.

d) Gonorrhoea and its Complications.

e) Diseases of the Urethra.

10) Diseases of the Generative System

a) Males b) Females c) Affections connected with Pregnancy. d) Affections connected with, and consequent on, Parturition.

11) Diseases of the Organs of Locomotion.

12) " " " Cutaneous System, including parasitic diseases of the Skin.

13) Conditions not necessarily associated with General

or Local Diseases.
14) Poisons.
15) General injuries
16) Local "
17) Surgical Operations.
18) Human Parasites.
19) Congenital Malformations.

This Classification has often seemed to me needlessly elaborate, especially in its subdivisions, and has looked as if it had been drawn out to suit the system of nomenclature; however, it answers the purpose from a practical point of view.

On making an analysis of the 378 deaths certified in accordance with the system of classification and nomenclature just described, I find that 100 out of 378, i.e. 26·4 p.c. belong to the division entitled "General Diseases". Scrofula claims 41 out of the 378 equal to 10·8 p.c. Scrofula is subdivided

into 4 groups, — viz. Phthisis Pulmonalis, Tabes Mesenterica, Tubercular Meningitis and Tubercular Peritonitis.

From among the group of Scrofulous Diseases I find that Phthisis Pulmonalis caused 30 deaths, or 7·9 p.c. of the 378: Tabes Mesenterica caused 5, Tubercular Meningitis, 3, and Tubercular Peritonitis 3 deaths.

I certified 8 deaths from Measles = 2·1 p.c.
Scarlet Fever caused 4 deaths or 1·05 p.c
Enteric Fever " 9 " " 2·3 p.c
Diphtheria " 7 " " 1·8 "
Hooping-Cough " 5 " " 1·3 "
Influenza " 2 "
Erysipelas " 4 "
Puerperal Fever " 1 "
Acute Rheumatism " 1 "
Syphilis " 1 "
Cancer " 10 " or 2·6 p.c.
Anaemia " 5 "
Senile Gangrene " 2 "

Thus

making a total of 100 deaths from "General Diseases".

Under the division, "Diseases of the Nervous System", I find 50 cases of "Diseases of the Brain and its Membranes", i.e. 13·2 p.c of the whole number of deaths:

"Diseases of the Spinal Cord and its Membranes" caused 3 deaths.

"Functional Diseases of the Nervous System" caused 17 deaths equal to 4·4 p.c.

"Disorders of the Intellect" caused one death, thus making a total of 71 cases of death from "Diseases of the Nervous System", i.e. 18·7 p.c.

"Diseases of the Eye, the Ear and the Nose caused no deaths.

On the other hand, "Diseases of the Heart and its Membranes" were the cause of 31 deaths equal to 8·2 p.c. of the whole number.

There is only one case of death from "Diseases of the ductless Glands", viz. one of Addison's

Disease.

Then "Diseases of the Respiratory System" caused as might be expected (and this exclusive of Phthisis Pulmonalis) a large proportion of deaths. I certified 95 deaths as due to "Diseases of the Respiratory System" equal to 25·1 p.c. of the total number.

From "Diseases of the Digestive System", including Diseases of the Stomach, Intestines and Liver, 40 deaths out of 378 occurred, i.e. 10·5 p.c.; the details of these are as follows 4 deaths from Diseases of the Digestive System which includes such cases as Hare-lip, Stomatitis, Cancrum Oris, Tonsillitis, Stricture of the Oesophagus &c., 1 death from Diseases of the Stomach (this is not a case of Cancer of Stomach, one or two such cases having been put down under the heading of "General Diseases"), 22 deaths from Diseases of the Intestines, or 5·8 p.c., and 11 deaths

from Diseases of the Liver, equal to 2·9 p.c
I had to certify 16 deaths from Diseases of the Kidney, a p.c. of 4·2. of the 378, 2 deaths from Diseases of the Bladder, and none from Diseases of the Prostate Gland, or from Gonorrhoea and its complications.

Under the division of "Affections Consequent on Parturition", I certified 7 deaths, or 1·8 p.c. and under "Conditions not necessarily associated with general or local Diseases", 14 deaths were certified equal to 3·7 p.c.
"Surgical Operations" were followed by 2 Deaths or 0.52 p.c.
In the case of Phthisis Pulmonalis scheduled under Scrofula among "General Diseases", there were 30 deaths. Now, as regards the age at death in this disease, one died at the age of 3 months (there was also Tubercular Meningitis and Convulsions in this Case), another at 1 year and 6 months,

while two died aged 63 and 65 years respect-ively; the average age at death in this disease I find to be 29.9 years. As regards sex, 15 were males and 15 females. The duration of the disease ranged from a few weeks in some cases to several years in most of them. The ~~cases of~~ deaths from Tabes Mesenterica, Tubercular Peritonitis and Tubercular Meningitis, all put together, only numbered 11.

The mortality from Measles and its sequelae is exactly double that from Scarlet Fever. I believe this is explained by the fact that, in addition to several ordinary epidemics of Measles, Leyland has suffered from one very severe invasion.

The cases of Enteric Fever and Diphtheria the deaths of which I certified, have occurred mostly outside the Leyland Local Board District, ~~and~~ are beyond the reach of a good system of sewerage and water supply.

The average age at death in the Enteric Fever cases was 38 years, the oldest being 66 and the youngest 7 years; 7 were females and 2 only were males.
In the case of the 7 deaths from Diphtheria, the average age was only 2½ years; 4 were females and 3 were males.

The single case of death from Acute Rheumatism was a man 33 years of age who died on the 7th day of the disease in a hyperpyrexial condition.

In regard to the 10 deaths from Cancer, 6 were females and 4 were males; the average age at death was 67 years: 3 were cases of Cancer of the Liver, 2 - Cancer of the Breast, 1 - Cancer of the Stomach, 1 - Cancer of Lip (Epithelioma) 1, - Malignant disease of the Cervical Glands, 1, Malignant growth of the Caecum in a female 79 years old, & 1, - Malignant growth of Omentum &c. in a

male child 18 months old.

Among Diseases of the Brain and its membranes, 15 deaths from Meningitis (3·9 p.c.) were certified; 10 were females and 5 were males; the average age was 9 years.
There were 29 deaths from Apoplexy (7·6 p.c.) 15 were females and 14 were males; the average age at death was 62 years; the youngest was 34 years and the oldest 88.

It seems strange to me that during all the years I have been practising in Leyland I have not diagnosed with certainty a single case of Aneurism, although I have been on the alert in looking out for such cases. I have not had to certify any deaths as due to "Diseases of the Arteries".

The death from Addison's Disease among "Diseases of the ductless Glands" was in the case of a man 32 years of age, and the duration of the disease was 11 months.

Deaths from "Diseases of the Respiratory System" are of comparatively frequent occurrence. I certified 95 in 10 years, exclusive of cases of Phthisis Pulmonalis. Croup caused only 1 death, a boy aged 4½ years; the duration of the disease was 2 days.

Acute Laryngitis caused 6 deaths, 4 females and 2 males.

Acute Bronchitis caused 23 deaths (6·08 p.c.) 17 males and 6 females; ~~as~~ the average age at death was 43 years.

47 deaths were caused by Pneumonia equal to 12·4 p.c.; these were described in the Certificate-book, some as Acute Pneumonia, some as Broncho-Pneumonia, and others as Pleuro-Pneumonia; 26 were males and 21 were females. Gangrene of the Lung complicated one of the cases of Pneumonia, occurring in a very intemperate man, a brick-setter by trade,

45 years of age, and proving fatal on the 14th day of the disease.

Atelectasis was diagnosed to be the cause of death in 11 cases or 2·9 p.c. of the total deaths: 8 were females and 3 were males; the mean age at death was between 3 & 4 weeks.

Two deaths were certified as caused by Acute Pneumonic Phthisis, and 4 by Chronic Pneumonic Phthisis.

It seems strange that only one death is certified as due to Pleurisy, a man 27 years old.

Among Diseases of the Intestines, Acute intestinal and gastro-intestinal Catarrh furnish the largest proportion of deaths, viz.- 17, 10 of which were males and 7 were females. These deaths occurred most frequently in the Summer and Autumn and mainly in Infants. There were 2 deaths from Fistula, one

of Vesico-Rectal Fistula in a woman 56 years old, and the other a case of Pericaecal Abscess resulting in Faecal Fistula in a man 53 years old. There is a case certified as Typhlitis in a female 77 years of age, and one of Enteritis in a male 61 years old, the duration of which attack lasted only 4 days. The 22nd Case of Diseases of the Intestines was one of Intussusception in a boy aged 7 months, the duration of the disease being 4 days.

Cirrhosis appears to be the most frequently certified as the cause of death among "Diseases of the Liver"; there were 9 such deaths, mostly alcoholic in their causation and occurring in elderly people; the youngest was 41, and the oldest 76 years of age: the mean age at death was 57; 6 were females and 3 were males. There was one death registered as "Fatty Liver" in a female 77 years old, and another as "Icterus Neonatorum"

in a male Infant, aged 62 hours.

All the 16 deaths from "Diseases of the Kidney," with one exception, were certified as "Bright's Disease, chronic". I have had cases of Acute Nephritis, but have never had to certify a death from it so far. The one exception to the cases of Chronic Bright's Disease was a death from Uraemia, connected with Atonic Gout and Kidney Complications in a male aged 68 years. The 15 cases of Chronic Bright's Disease were mostly associated with Dropsy towards the last; some with Heart Disease and Bronchitis, and two manifested Apoplexy: nine were males & six were females: the oldest was 77 years and the youngest was 14; this was a case of Lardaceous Disease of the Kidney; the others were the Granular Kidney.

There were 2 deaths certified as due to Disease of the Bladder, two cases

P

Chronic Cystitis in males, age 50 & 69 years.

Cases of Calculus in the Bladder seem to me to be quite uncommon in this district, though cases of Renal Calculus occur not unfrequently.

Five of the 7 deaths certified as caused by "Affections Consequent on Parturition", are cases of Metro-Peritonitis: there is 1 of Post-Puerperal Convulsions, and 1 of "Sudden death after Delivery probably caused by Cardiac Thrombosis".

Under the division, "Conditions not necessarily associated with general or local Diseases", 10 deaths are put down to "Old Age". 8 are males and 2 are females; the ages are, 80, 80, 75, 84, 88, 83, 93, 85, 86 & 94 years, equal to an average of 84½ years. Four deaths are certified as due to Premature Birth and Debility with Convulsions in one of the cases.

"Surgical Operations" were followed by 2 deaths; one was a case of Herniotomy for Strangulated Femoral Hernia, of 3 days duration, in a female 40 years old, who died on the 4th day after the operation: the other was a case of Craniotomy done for Parturition with Contracted Pelvis in a woman 30 years of age.

Among "Local Injuries" one case is certified as "Fracture of Thigh & Diarrhoea, 3 weeks": it was the case of a male child born with Breech Presentation, in which, unfortunately, the Thigh Bone was broken in the efforts to deliver; the Fracture was doing well, I believe, but the child was seized with severe Diarrhoea and died at the age of 3 weeks.

I see that the last book of forms of the "Medical Certificate of the Cause of death", which I got from the local Registrar

only two or 3 months ago, does not contain the Classification and nomenclature adopted by the Royal College of Physicians in 1868; it may be that an improved one is to be published, or that practitioners are to be left to certify deaths according to the Nosology taught in their own schools. I must testify to the help which the above system often gave me in certifying deaths. It only remains for me to say that the longer one continues to practise medicine conscientiously, the more need one sees for thorough and accurate Diagnosis, without which sound treatment and truthful registering of the cause of death cannot be obtained.

P. Fraser M.B.